Appendix B: WOTIS – Master Communication

B.1 Introduction

This document defines the method of communication of the operational schedule from the Wallops Orbital Tracking Information System (WOTIS) to the automated tracking station Master. Specifically, it describes the procedure by which the Master is notified of a new operational schedule as well as the contents and format of the file delivered to the Master.

This document supersedes any previous documentation defining the communication of the operational schedule from WOTIS to the Master.

B.2 Delivery and Notification of a New Schedule

The Master receives scheduling information via Ethernet. The operational schedule is sent to each Master via FTP. A file containing new schedule information is transferred to the following destination on the Master: **c:\Master\Schedule\wotrs.mas**.

Each Master is notified that new schedule data has been delivered by a message sent from WOTIS to a socket (**22375**) created and maintained by the Master. The Master does not begin ingesting the new schedule until this notification is received.

B.3 Format and Contents of the Operational Schedule

The file delivered from WOTIS to the Master is an ASCII text file. The format of the file is as follows:

- Security Code
  The first line of the file is a security code that signifies to the Master that the schedule file is a valid operational schedule file. This code includes up to eight characters.
- Day of Year and Year
  The next line of the file includes the day of year and year (including century) to which the schedule pertains.
- Event Information for Each Event
  A complete description of each event to be conducted by the tracking station is included. Event information is assumed to be chronologically ordered and conflict free. For a detailed description of the information required for each event refer to section **4.0 Format and Contents of Event Information**.
- Terminator
  The last line of the file, immediately following the last element of the last event, is the end of schedule terminator ###.

B.4 Format and Contents of Event Information

The section describes the information included for each scheduled event. The definition, format, and default is provided for each element. If an element is not available for or not relevant to an event, the default value is included. (Note: if the default value for an element is defined as Not applicable, that element of the event is essential and must be included for all events.)

- Satellite ID*
  Definition: The satellite for which tracking station support is scheduled.
  Format: Up to eight alphanumeric characters.

* Fields marked with this symbol are used by the Master in determining the appropriateness of a support profile for a scheduled event.

Default: Not applicable.

- Site ID
  Definition: An identifier of the station scheduled to perform the event.
  Format: A character string containing one of the following site IDs:
  AGS
  MGS
  SGS
  WPS
  Default: Not applicable.

- WOTRS Line Item
  Definition: A WOTRS event specific identifier.
  Format: Up to ten alphanumeric characters.
  Default: Not applicable.

- Operation*
  Definition: The operation to be performed.
  Format: A single integer corresponding to one of the following operations:
  0 None (NON)
  1 Scheduled Support (SUP)
  2 Scheduled Playback (PBK)
  3 Scheduled Test (TES)
  4 Time Window Playback (TWP)
  5 Down (DWN)
  Default: 0

- Receive and Transmit Antenna Specifications*
  Definition: Receive and transmit antenna identifiers scheduled for the support.
  Format: Two integers, separated by a space, and corresponding to the following codes:
  None
  9 meter
  7.3 meter #1
  7.3 meter #2
  Satan 1
  Satan 2
  UHF – Satan 3
  ADAS
  Meteosat
  6 meter
  SA 10 meter
  SA 11 meter
  Scamp
  TOTS #1
  TOTS #2
  TOTS #3
  LEO-T 5 meter
  26 meter
  15 meter
  34 meter
  Default: 0 0

- AOS and LOS Date
  Definition: The dates of Acquisition of Satellite (AOS) and Loss of Satellite (LOS).
  Format: AOS day of month, month, year (including century), and LOS day of month, month, year (including century); where all fields are integers and separated by a space.

Default: Not applicable.

- AOS and LOS Time
  Definition: The times of AOS and LOS.
  Format: AOS hours, minutes, whole seconds, and LOS hours, minutes, whole seconds; where all fields are integers and AOS and LOS are separated by a space.
  Default: Not applicable.

- Event Start and Stop Date
  Definition: The start and stop dates for the event.
  Format: Start day of month, month, year (including century), and Stop day of month, month, year (including century); where all fields are integers and separated by a space.
  Default: Not applicable.

- Event Start and Stop Time
  Definition: The start and stop dates for the event.
  Format: Start hours, minutes, whole seconds, and Stop hours, minutes, whole seconds; where all fields are integers and Start and Stop are separated by a space.
  Default: Not applicable.

- Ranging
  Definition: A flag indicating if ranging is to be performed in conjunction with the event.
  Format: An integer, where 0 corresponds to false and 1 corresponds to true.
  Default: 0

- Support Type
  Definition: The type of support with which the event is associated.
  Format: Four flags, separated by a space. Each flag indicates True (1) or False (0) for each of the following support types: Receive Link, Commanding, Tracking, Real-time Data.
  Default: 0 0 0 0

- Data Line
  Definition: The data line scheduled to be used during the support, specified in KB.
  Format: An integer.
  Default: 0

- Data Rate
  Definition: The data rate and format describing the spacecraft downlink.
  Format: Up to 5 characters, A-G.
  Default: *

- Doppler Specification
  Definition: An indication of the RF link to be used for the event.
  Format: A single integer corresponding to one of the following values:
  -1 None
  0 Full two-way Doppler
  1 One-way Doppler
  2 Two-way Doppler
  3 Three-way Doppler
  Default: -1

- Voice Period
  Definition: The start and stop times for the voice period.
  Format: Start hours and minutes and Stop hours and minutes, where all fields are integers and start and stop times are separated by a space.
  Default: 0000 0000

- Orbit Number
  Definition: The satellite orbit number.
  Format: An integer.
  Default: 0

- Tape ID
  Definition: An identifier for a tape to be used for a playback.
  Format: Up to 15 alphanumeric characters including a three character site ID, a two character recorder ID (AX = Ampex, MM = Metrum BVLDS), and a 10 character tape volume label.
  Default: NONE

- Start Block Address
  Definition: The start block address for a playback.
  Format: Up to 10 alphanumeric characters.
  Default: NONE

- End Block Address
  Definition: The end block address for a playback.
  Format: Up to 10 alphanumeric characters.
  Default: NONE

- Band
  Definition: The downlink band for the antenna.
  Format: Two alphanumeric characters.
  Default: XX

- Ephemeris
  Definition: The ephemeris data for the event.
  Format: An ASCII text string including a format specification followed by data. The format specification (and the corresponding data) must be one of the following: Brouwer, tod, or iirv. The data/time must be in a modified Julian format.
  Default: NOEPHEMERIS

- Remarks
  Definition: Remarks to be relayed to the operator.
  Format: Up to eighty alphanumeric characters.
  Default: NONE